United States Government | Department of Energy

memorandum

Albuquerque Operations Office
Kansas City Area Office
Kansas City, Missouri 64141-0202

DATE: NOV 2 6 1997

REPLY TO ATTN OF: OTM:Caughey(816) 997-3449:

SUBJECT: **DOE/AL Response to the May 14, 1997 Explosion at Hanford's Plutonium Reclamation Facility**

TO: Larry D. Kirkman, Deputy Assistant Manager, Office of Technical Management and Operations,

Attached is a consolidated response to your September 22, 1997, memorandum and the November 7, 1997, memorandum from Gene Runkle titled: Secretarial Memorandum on the Assessment of Hazards Associated with Chemical and Radioactive Waste Storage Tanks and Ancillary Equipment. This response has been reviewed, validated and concurred on by the Kansas City Area Office (KCAO) and applies to both Kansas City Plant and Kirtland Operations facilities. This report should provide the information you need to prepare both the progress report and the 120-day report requested by Secretary Peña's May 14, 1997, memorandum. Although the Hanford explosion incident has caused us to reexamine our emergency planning and reporting processes as well as the nature of our facility operations, we have found no vulnerabilities that were not previously identified.

Please do not hesitate to contact David Caughey (816-997-3449), of my staff, if you need any further assistance.

David A. Gurulé
Area Manager

cc: w/attachment
G.E. Runkle, AL/OSHD
K.L. Delman, AL/OSHD
P.T. Hoopes, KCAO/OTMO
C.C. Gentile, AlliedSignal D/010, OD27

Kansas City Area Office Progress Report
Response to Hanford's Plutonium Reclamation Facility Explosion
November 26, 1997

Reference: Federico Peña Memorandum, August 4, 1997, "DOE Response to the May 14, 1997, Explosion at Hanford's Plutonium Reclamation Facility"

Information specific to Kansas City Plant (KCP) and Kirtland Operations (KO) facility operations for each of the four initiatives contained in the reference memorandum is provided below.

1. *DOE site contractors must scrutinize their use or storage of any chemicals that have the potential for explosion, fire, or significant toxic release, and must promptly dispose of unneeded chemicals in accordance with safety requirements and environmental regulations. DOE field offices should develop an approval process to assure the disposal or safe and environmentally compliant storage and handling of such chemicals that are retained.*

   The KCP and KO are nonnuclear, low hazard facilities as defined by the Site Safety Assessment for the Kansas City Plant and the Hazard Survey for Kirtland Operations. AlliedSignal Federal Manufacturing & Technologies (FM&T) manages, stores, and distributes hazardous materials at both facilities in accordance with federal regulations and DOE directives. FM&T uses a systematic process for determining the appropriate storage for hazardous materials. Hazardous materials are segregated and stored based on environmental, fire, and safety aspects of the material as well as the storage temperature requirements. Storage codes are assigned to hazardous material to identify the primary hazards of chemicals and to provide proper segregation of incompatible materials. Storage codes for productive materials are assigned by the Engineering department and are specified in the individual material standard. Storage codes and conditions for productive and non-productive hazardous materials are established in Process Specification 9943016 - "Storage Condition for Production Materials." Storage codes for nonproductive materials are assigned by Environment, Safety and Health (ES&H) personnel, using the code and condition references as the productive materials.

   During September 1997, the Kansas City Area Office (KCAO) and FM&T defined ES&H Thresholds to quantify limits for significant or high risk hazardous materials used and/or stored at the KCP and KO. These limits have been incorporated into the contractually required "ES&H Management Plan." The three categories and their thresholds include:

   - Explosives: The storage, handling, testing, use and shipping of explosives (energetic materials) at the FM&T will be limited to materials shipped as United Nations Organization (UNO) Hazard Class 1, Divisions 3 (1.3) or 4 (1.4).

- Hazardous Chemicals: The listings contained in the Occupational Safety and Health Administration's Standards *"Process safety management of highly hazardous chemicals"* (29 CFR 1910.119) and the Environmental Protection Agency's *"Chemical Accident Prevention Provisions"* (40 CFR 68) are the regulated hazardous chemicals and quantities thresholds.
- Radiological Material: FM&T is a non-nuclear radiological facility. The FM&T inventory will not meet or exceed threshold quantities of radionuclides for higher hazard class categories 2 and 3. Table A.1 of the DOE-STD-1027-92, *"Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Report"*, lists the threshold quantities by radionuclide.

Unused or excess hazardous materials are reviewed for potential re-use or re-sale. During the circularization process the materials are retained in Chemical Stores to ensure safe storage. Hazardous waste generated at the KCP and KO is stored, managed, and shipped in accordance with existing state and federal regulations and existing permits. Storage lots are inspected on a weekly basis to ensure that safety and environmental regulations are met. The KCP and KO have no Legacy Waste and no longer use bulk storage tanks for hazardous waste.

These requirements and conditions are verified annually through internal and external assessments including:

- Annual ES&H Inspections
- Annual Explosives Safety inspections/audits
- Det Norske Veritas (DNV) International Safety Rating System Appraisal
- International Organization for Standardization (ISO) 14001 Environmental Management System Standard evaluation of environmental aspects
- DOE Voluntary Protection Program (VPP) Annual Assessment
- Fire Protection Department inspections and annual preplanning self-assessments
- KCAO Quarterly ES&H Facility Reviews
- Ongoing KCAO Operations Representative observations and surveillances.

2. *DOE field offices must reassess known vulnerabilities (chemical and radiological) at facilities that have been shutdown, are in standby, are being deactivated, or have otherwise changed their conventional mode of operation in the last several years, and report status to their Program Secretarial Officers and the Assistant Secretary for Environment, Safety and Health within 120 days. Facility operators must evaluate their facilities and operations for new vulnerabilities on a continuing basis.*

In support of the Stockpile Management Restructuring Initiative (SMRI), the KCP is in the process of reducing it's footprint (square footage) by vacating areas of the plant and returning facility space to the General Services Administration (GSA). Production activities necessary to support SMRI and the DOE mission are being consolidated

within the existing facility. No facilities or operations are being decommissioned or deactivated.

Those areas (floor space) identified as return candidates have been reviewed for known chemical vulnerabilities. Documented operating histories indicate that no process upsets resulting in reportable spills have occurred. Those areas to be returned to GSA will be sampled for lead chromate and methylene chloride containing paint as well as solvents used for paint booth cleaning. Abandoned space will be freeze protected; excess equipment will be removed; and safety barriers installed for vacated foundations or pits.

New processes or changes in processes that may introduce new chemicals or change the inventories of chemicals at the KCP and KO are reviewed by ES&H personnel in accordance with the Preliminary Hazard Analysis (PHA) program, to ensure that ES&H Thresholds are not exceeded and that hazardous materials are effectively managed.

FM&T maintains and annually updates a Hazard Assessment for the KCP and a Hazard Survey for KO. Included in these documents is an examination of the amounts and hazardous properties of chemicals. Chemicals are examined during storage, transport, and use. Worst case credible events are computer modeled to identify the potential danger level presented by these chemicals. There are presently no materials that have been identified as sufficiently hazardous and used in large enough quantities to reach an Emergency Response Planning Guideline (ERPG) 2 level offsite. Based on the Hazard Assessment or Survey, worst case credible chemical events do not create an emergency level event as defined by DOE. Changes to hazardous material inventories or usage identified through the PHA program are communicated to the Emergency Management organization throughout the year.

3. *DOE and contractor field organizations with operational responsibilities must assess the technical competence of their staffs to recognize the full range of hazards presented by the materials in their facilities, act on results, and implement training programs where needed.*

Hourly and salaried associate training and qualification requirements are systematically identified and defined within the FM&T Qualification and Training program. By classification, this system establishes qualification, mandatory, and development training requirements for each FM&T associate. Associate qualifications and training are reviewed annually. Also, third-party assessments have validated the training and qualification system, including: the DOE Voluntary Protection Program, the Det Norske Veritas International Safety Rating System, the ISO 9001 Quality Management System and the ISO 14001 Environmental Management System certification reviews.

KCAO Assistant Area Managers assess the qualifications and technical competence of DOE personnel on an annual basis through the creation of Individual Development Plans (IDPs) that identify known deficiencies, establish short and long range goals, and establish training objectives. The KCAO Operations Representatives also have an established qualification program that is based on the requirements contained in the Albuquerque Operations Office Facility Representative Manual. These requirements have been to adapted to correspond to the nonnuclear nature of KCP and KO operations and to the technologies and hazards present at both sites. ES&H and other technical personnel are additionally encouraged to obtain and do possess nationally recognized registrations and certifications in their respective fields.

4. *DOE field offices must assess their site Lessons Learned and Occurrence Reporting programs to assure that 1) outgoing information is well characterized and properly summarized, and 2) incoming information is thoroughly evaluated, properly disseminated, appropriately implemented, and tracked through formal management systems.*

Each occurrence report generated at the KCP or KO is reviewed and approved by both the FM&T Facility Manager and KCAO Operations Representative to ensure accuracy. Occurrence report writing guidelines have been established to use in the report review process. Occurrence Reports are not released in the Occurrence Reporting and Processing System (ORPS) until the review and approval is complete. Training is provided to Facility Managers and KCAO Operations Representatives to ensure compliance with the Occurrence Reporting Plan.

Occurrence reports, emergency management drills and exercises, accident investigations, Operating Experience Weekly Summary, and daily operations and event reports are reviewed for lessons learned information. Corrective actions for lessons learned from emergency management drills and exercises, and accident investigations are distributed to appropriate FM&T and KCAO personnel and documented in an FM&T internal database. Safety Alerts and lessons learned from occurrence reports applicable to operations at FM&T are published in an electronic bulletin board available to all FM&T and KCAO personnel. Lessons learned information is also communicated using printed and internal television media at both the KCP and KO. Formal reporting of preventive actions taken is transmitted from FM&T back through KCAO to ensure closure occurs.